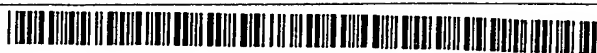


(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau(43) International Publication Date
5 August 2004 (05.08.2004)

PCT

(10) International Publication Number
WO 2004/066454 A1(51) International Patent Classification⁷: **H01R 13/639**,
H01H 43/00, G04G 15/00, H01H 9/02(21) International Application Number:
PCT/IT2004/000010

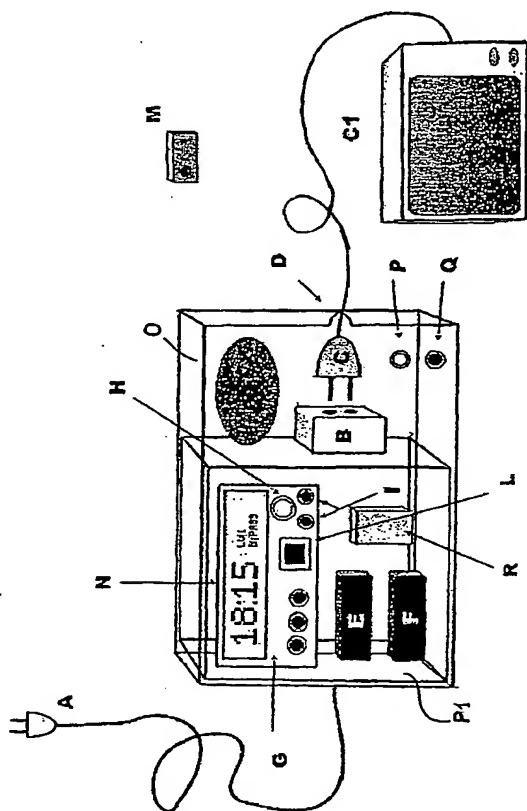
(22) International Filing Date: 21 January 2004 (21.01.2004)

(25) Filing Language: Italian

(26) Publication Language: English

(30) Priority Data:
FR2003A000002 22 January 2003 (22.01.2003) IT(71) Applicant: FUNTO' Roberto [IT/IT]; Via Napoleone III,
86, I-00185 Roma (IT).(74) Agent: TURINI, Laura; Piazza S. Giovanni, 8, I-56038
Ponsacco (IT).(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM, **Published:**
— *with international search report*(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).*[Continued on next page]*

(54) Title: DEVICE TO CONTROL AND LIMIT THE USE OF AN ELECTRICAL APPARATUS WITH WARNING SIGNAL

(57) Abstract: This invention consists of a box protected by a key-
block, inside which there is a socket where the plug of the electrical
apparatus to control fits, connected to a programmed electronic circuit
that controls the activation of a timer directing the connection/discon-
nection with the electric supply. The disconnection is anticipated by
a touching, sound, bright, vocal and/or smelling signal, which can be
preset by the user and allows to run any possible procedure of storage
and/or shutdown. Once the connection is interrupted, the controlled ap-
paratus cannot be turned on in any way, as it has no more the electric
supply necessary to work.

WO 2004/066454 A1



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

"DEVICE TO CONTROL AND LIMIT THE USE OF AN ELECTRICAL APPARATUS
WITH WARNING SIGNAL"

Description

Technical Field

5 The present invention relates to the technical sector of the production of accessories for the control of the activation/deactivation of electronic apparatus, in particular of television sets, so as to decide when said apparatus must be left on and when on the contrary it must be left off.

10 Background Art

Nowadays, we know instruments that permit to program the activation/deactivation of an electronic apparatus. In particular, many appliances can be programmed so as to be able to turn on/off at a prefixed time.

15 Nevertheless, said systems can be easily overcome modifying the programming system; for example, if we want to turn on an electrical/electronic apparatus after the system have turned it off, it's sufficient to program it again for the immediate start-up or manually push the relative button to make it work.

20 Therefore, said systems cannot be used when we want to program the activation/deactivation of an electronic apparatus so that it cannot be turned on in that period of time when it has been programmed off. This kind of need particularly concerns TV sets, since parents are often out and they don't want their
25 children to watch TV for a long period, therefore it's convenient to program the off action of the apparatus at a

prefixed time and make it impossible to be turned on for a certain period of time.

Nowadays, there are not known systems capable of satisfying this need.

5 **Disclosure of invention**

This invention aims at permitting to control the use of electrical apparatus of any kind, therefore, by means of suitable electrical valves, also to control the flows of fluids such as gas, water, liquids in general, both for house
10 or professional use. In other words, thanks to this invention it's possible to control that the apparatus is used only for the prefixed period of time. A blackout (or a failure of gas or other fluids) is anticipated by a signal that may be sound, bright, smelling, touching, telematic or other, and vocal, so
15 that interested people are warned.

The device object of this invention is useful when we need to limit the use by others of any electrical apparatus or flows of fluids. The main example is the excessive use of television and videogames by children left alone at home. This device
20 does not only tackle the problem by a technical point of view, but, following the advice of experts in youth psychology, it also allows youth to become more responsible thanks to the vocal message they have previously recorded with their parents or other responsible adults.

25 Briefly, this invention comprises a semi-fixed electric socket protected by a key-block, which permits to control the

connection/disconnection of electrical apparatus or, by means of suitable electrical valve, the flow of fluids, and of a double circuit of timer that controls the activation/deactivation. This timer is anticipated by a touching, sound, bright, vocal and/or smelling signal, which can be preset by the user and allows to run any possible procedure of storage and/or shutdown required e.g. by connected computers or consoles.

Reduced to its essential structure, a device to control and limit the use of an electrical apparatus according to the present invention, includes: a box (O), closed by mechanical or electronic key, equipped with a hole (D) for the wire of the plug (C) of the apparatus to control (C1), inside which there is a socket (B) where said plug (C) fits, connected to a programmed electronic circuit (E) that controls a timer directing the connection with the electric supply and the activation of a sound or visual signal, before said connection is interrupted causing the electrical apparatus connected to the device stop.

Conveniently, the plug (C) of the apparatus to control fits into the socket (B) of the device, which in its turn is connected to the electric supply by means of the plug (A), so that the device is always connected to electric energy, while the apparatus to control (C1) is connected to electric energy only when the timer decides, according to the preset programming.

This device comprises an electronic memory (F) where a message is recorded by the user or other person, so that before the apparatus turns off the pre-recorded message will be heard.

This technical feature is very important from an educational point of view, because the person or the youth, involved in this operation to limit the use of a certain electronic apparatus, can record his/her own message and listen to his/her voice before the apparatus turns off, being motivated to accept what it's happening.

10 Conveniently, this device includes inside said box, closed by mechanical or electronic key, the following components:

- an electronic circuit (E) controlling the timer work;
- an electronic memory (F) permitting the storage of the vocal message;
- 15 - a microphone (H) for the recording of the vocal message;
- a loudspeaker (O);
- a pilot light (P);
- a control panel of the timer and the recorder (G);
- the REC and PLAY buttons (I);
- 20 - a further button (L) with three positions (ON/OFF/BYPASS);
- a display for the reading of the preset data (N);
- a supply unit (R).

This device can be controlled even apart by means of a remote control (M). In this case, the box also includes a sensor (Q)
25 for the remote control.

Conveniently, said components are included inside the box of the device in a further closed compartment (P1).

Conveniently, the box has a very tight opening (D), which only the wire of the apparatus connected to the device can pass through, so that the plug connected to it cannot be easily removed from the internal socket (B) that connects it to the control device.

Conveniently, this device can be activated or deactivated according to three different modes:

- 10 - keeping it active and ready to carry out the preset instructions (ON);
- keeping it blocked in such a position that does not permit the start and the use of the apparatus (OFF);
- keeping it in "bypass" mode, i.e. in a position where it's possible to use the apparatus connected to it without any limitation (BYPASS).

When it is in the first mode (ON), the system allows the connection of the apparatus with the energy supply in the lapses of time programmed by the user.

20 In summary, this device constitutes a filter between the plug (C) of the apparatus to control (C1) and the electric supply. As a matter of fact, the plug (C) is not directly connected to the supply socket, but on the contrary to the socket (B) inside the box of the device and only indirectly to the electric supply to which the plug (A) of the same device is connected. This device is therefore a filter between the plug

of the apparatus to control and the socket of the electric supply, so that energy supply always arrives to the device, but reaches the apparatus to control only in the preset period of time, so permitting to turn the apparatus on/off. When the
5 connection with the electric supply is active, the user can choose at his/her discretion to keep the apparatus on/off, but when the connection is deactivated the apparatus must be necessarily off.

We are now going to describe one of the possible manufacturing
10 systems of this invention.

The device is essentially made of a box with a cover that can be opened only by the relative electronic or mechanical key. From said box the supply wire (A) comes out to be connected to a standard electric socket with 220 volts. Opening this box,
15 we find the internal socket (B) where the plug (C) of the apparatus to control (C1) fits. The wire of said plug (C) comes out from the other side of the box through a tight opening (D) making it impossible to be disconnected from the outside. Inside the box, in a suitable closed compartment, we
20 find the electronic, electromechanical or mechanical circuit of the timer with the chip containing the sequence of instructions to fulfil (E), and the chip allowing the storage of the vocal message (F). These components can be directed by means of a control panel of the timer and the recorder (G),
25 which permits to prefix the period of time when the internal socket must be supplied as well as the time to anticipate the

deactivation, and the microphone (H) for the recording of the
vocal message, controlled by two relative buttons REC and PLAY
(I). A further button (L) with three positions
(ON/OFF/BYPASS), which can be directed even by an infrared or
5 ultrasound remote control, permits to control the status of
the device according to the following modes:

ON - the device is active and carries out the preset
instructions;

10 OFF - the device is blocked and does not permit the start and
use of the apparatus;

BYPASS - the device is in "bypass" mode, which means that it's
possible to use the apparatus without any limitation.

Out of the box, we find the liquid crystal display (N), or
other kind of alphanumerical system to read the preset data,
15 which indicates the status (ON/OFF/BYPASS) of the device and
the preset lapse of time, the loudspeaker (O) emitting the
sound signal and/or the pre-recorded message, the pilot light
(P) and the possible sensor for the remote control (Q).

A plug battery (R), e.g. with 9 volts, ensures the energy
20 supply to the watch, also in the case of a blackout, for
enough time. Therefore, within this period the device does not
lose the programming, even if it cannot normally operate.

This device is small and its size can be further reduced as
the miniaturization techniques of the electronic components
25 are developing.

As for the programming, the device allows to control, acting on the electric supply, any apparatus connected to it. By means of suitable relays or electric valves, it also permits to control the flow of fluids such as gas, water, liquids or other, so permitting to improve the security standards, e.g. interrupting the flow of said fluids during night. The pre-recorded vocal or sound message can be circulated by means of a system of loudspeakers, so warning all the people in a certain building of the next interruption of the flow of a particular fluid. Also at home, it's possible to preset the security suspension of the flow of gas during night and/or day hours when individuals are out. In the case we need to temporarily reactivate the suspended flow, the suitable remote control (M) or the button with three positions (L) however permits to restart the flow and easily come back to its suspension when the extraordinary utilization has finished.

The device object of the present invention can be used in many different cases. First of all, it tackles the problem of the youth left alone at the TV or the game console for too much time, but obviously it may be use in several different situations where it's necessary to limit, in the range of the 24 hours, the use of certain appliances.

The approach to the above-mentioned problem is one of the most innovative aspects of this device. According to the advice of experts in this field, the use of the present device offers a first phase of decision between parents and children about the

possible time to use the apparatus to control. In the second phase, when the device implements its technical task, the vocal message pre-recorded by the minor recalls the agreement taken with his/her parents. In this way, besides the practical effect to avoid the abuse of the apparatus at issue, which in the most serious cases might cause psychophysical damages, we get an education effect on the youth for the honouring of the undertaken commitment.

Output and operating costs of this invention are extremely reduced, above all for the basic models.

This device is completely versatile, as it can be connected to any kind of apparatus, e.g. office terminal networks, computers, machine tools or, at home, TV sets, game consoles, electrical appliances, mechanisms to open the doors.

This system uses all standard components, easy to find on the market, and can be realized in several manufacturing ways, but still remaining within the principal characteristics of this idea. It can be realized in versions assembling control panels or electronic racks, in wall or sunk structure.

The system has been realized in order to be used in any environment, as it may be hold in other supports and may be connected to the main apparatus or to the one to control, by one or more control systems, either manually or telematically, by wire, optical fibre, air or other.

Brief description of drawings

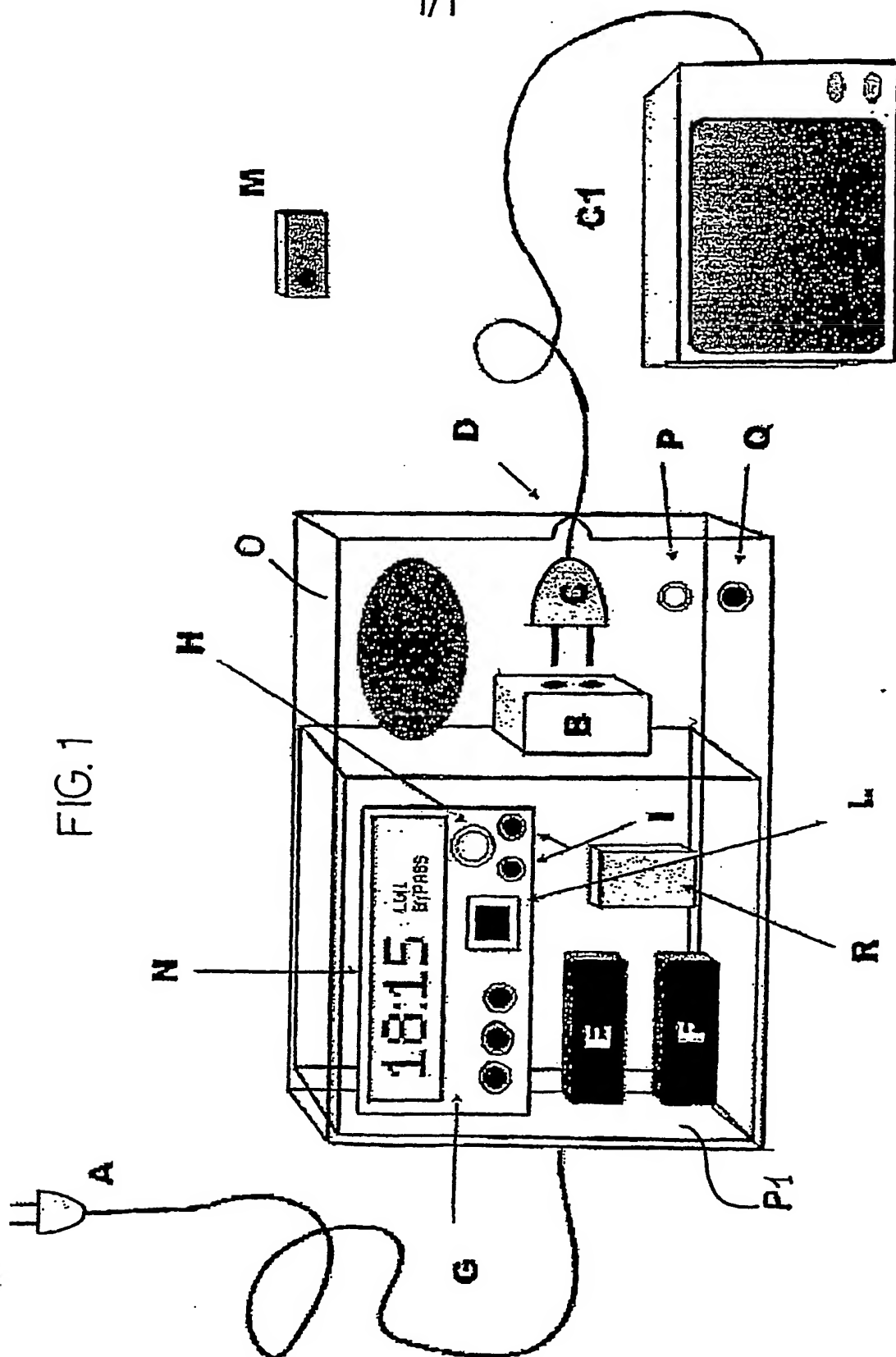
Fig. 1 shows the device including: a supply wire (A), a socket (B), the timer circuit with the chip (E), the chip permitting the storage of the vocal message (F), a control panel of the timer and the recorder (G), the microphone for the recording
5 of the vocal message (H), the REC and PLAY buttons (I), a further button (L) with three positions (ON/OFF/BYPASS), a display for the reading of the preset data (N), the loudspeaker (O), the pilot light (P), a supply unit (R). This
10 device can be controlled even apart by means of a remote control (M), in this case, the box also includes a sensor (Q) for the remote control. The device is then connected to the electronic apparatus to control (Cl), by means of the plug (C) passing through the opening (D).

CLAIMS

- 1) Device to control and limit the use of an electrical apparatus, characterised in that it includes: a box, closed by mechanical or electronic key, equipped with a hole for the wire of the plug of the apparatus to control, inside which there is a socket where said plug fits, connected to a programmed electronic circuit that controls a timer directing the connection with the electric supply and the activation of a sound or visual signal, before said connection is interrupted causing the electrical apparatus connected to the device stop.
- 2) Device as claimed in claim 1, characterized in that the plug of the apparatus to control fits into the socket of the device, which in its turn is connected to the electric supply by means of a second plug, so that the device is always connected to electric energy, while the apparatus to control is connected to electric energy only when the timer decides, according to the preset programming.
- 3) Device as claimed in claim 1, characterized in that it comprises an electronic memory where a message is recorded, which circulates before the apparatus turns off.
- 4) Device as claimed in claim 1, characterized in that it includes inside said box the following components:
- an electronic circuit (E) controlling the timer work;
 - an electronic memory (F) permitting the storage of the vocal message;

- a microphone (H) for the recording of the vocal message;
 - a loudspeaker (O);
 - a pilot light (P);
 - a control panel of the timer and the recorder (G);
- 5 - the REC and PLAY buttons (I);
- a further button (L) with three positions (ON/OFF/BYPASS);
 - a display for the reading of the preset data (N);
 - a supply unit (R).
- 5) Device as claimed in claim 4, characterized in that it can
- 10 be controlled even apart by means of a remote control (M), for which it includes a sensor (Q).
- 6) Device as claimed in claim 1, characterized in that said box has a very tight opening (D), which only the wire of the apparatus connected to the device can pass through, so that
- 15 the plug connected to it cannot be easily removed from the internal socket (B) that connects it to the control device.
- 7) Device as claimed in claim 1, characterized in that it can be activated or deactivated according to three different modes:
- 20 - keeping it active and ready to carry out the preset instructions (ON);
- keeping it blocked in such a position that does not permit the start and the use of the apparatus (OFF);
 - keeping it in "bypass" mode, i.e. in a position where it's
- 25 possible to use the apparatus connected to it without any limitation (BYPASS).

1/1



INTERNATIONAL SEARCH REPORT

In tional Application No
PCT/IT2004/000010

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01R13/639 H01H43/00 G04G15/00 H01H9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01R H01H G04G G07F G07B G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 125 492 A (TRELEAVEN DAVID H ET AL) 30 June 1992 (1992-06-30) column 4, line 3 - line 6	1,2,6
Y	----- EP 1 031 480 A (INOVA DESIGNS LIMITED) 30 August 2000 (2000-08-30) column 6, line 6 - line 14	3-5,7
Y	----- US 4 279 012 A (BECKEDORFF DAVID L ET AL) 14 July 1981 (1981-07-14) column 21, line 1 - line 3	3,4
Y	----- US 4 588 901 A (HEWETT WILLIAM A ET AL) 13 May 1986 (1986-05-13) column 2, line 50 - line 51	5
Y	-----	7

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

21 May 2004

Date of mailing of the international search report

01/06/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Demo1, S

INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No
PCT/IT2004/000010

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5125492	A	30-06-1992	NONE	
EP 1031480	A	30-08-2000	EP 1031480 A1 AU 1755800 A	30-08-2000 31-08-2000
US 4279012	A	14-07-1981	NONE	
US 4588901	A	13-05-1986	NONE	